



Indiana Department of Education
SUPPORTING STUDENT SUCCESS

Technology Standards for Teachers and Students

21st Century Learning Lab

November 30, 2010

21st Century Learning Lab

- [Launched](#) in September
- Topical Exploration of Educational Technology (Podcasts, Webinars, Blogs, LC Communities)
- Current topic—Technology Standards for Teachers and Students
- [Upcoming Topics](#)
 - Educational Technology in the Science Classroom
 - Educational Games
 - Assistive Technology
- Subscribe to podcast and see updates in iTunes



Technology Standards

- Historically, a variety of approaches to technology standards
- 2010 State Board of Education formally adopts ISTE-NETS-S
- 2010 Teaching standards take NETS-T into account
- Next steps from the IDOE
 - Finding good implementation examples from the field
 - Contemplating what assessment of student standards might look like



Need for Intentional Effort around Technology Standards

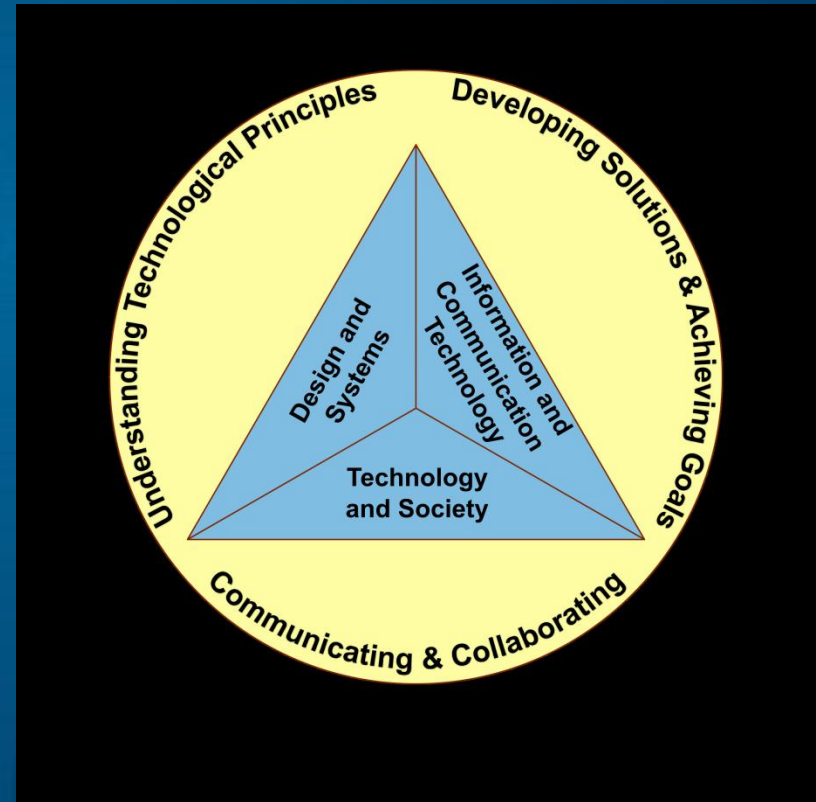
- 21st Century Skills
- Life-long Learning
- Digital Citizenship and Responsible Use
- Workforce Readiness
- Context for Assessment
- National Assessment (NAEP)



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Technology & Engineering Literacy (NAEP)

- <http://www.edgateway.net/cs/naepsci/print/docs/470>
- Describe the properties of a spring that inspired the invention of the Slinky. (animation)
- List three important criteria for a device that will toast bread, and justify each one.
- How do the physical and human components of the school cafeteria food service system work together? (animation)
- Why do Bill and Sally oil their bike chains and axles and check the brakes each month? What may happen if they do not?



Support for Efforts around Technology Standards

- Sharing implementation of standards already at LC community “Technology Standards”
- Standards embody a set of concepts and skills that must be taught not *caught*.

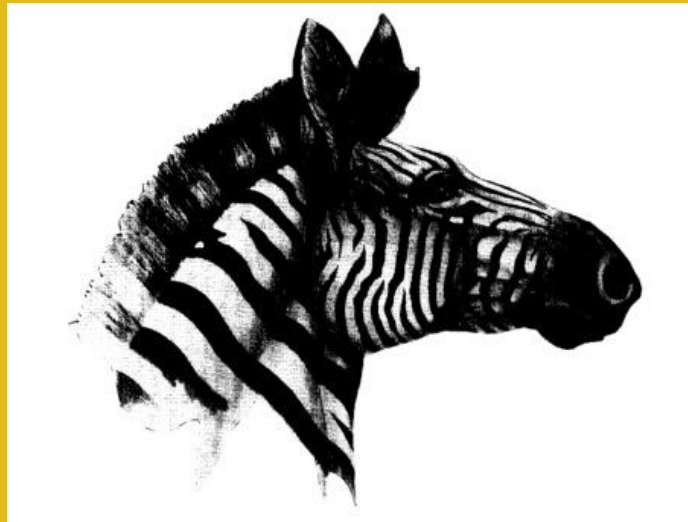




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Rochester Community School Corporation

- Theresa Shafer-Director of Technology



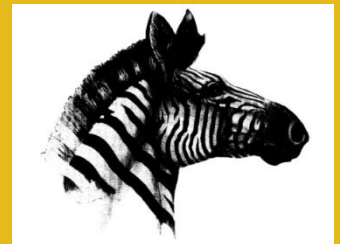
What we're doing

- 3 levels of Technology Proficiencies for staff
- Includes Teachers AND Administrators
- What do our teachers need to know and be able to do?
- Analyzed and sorted our work orders
- Created the Level 1 proficiencies



How we're doing it

- 1st took to Discussion w/ Teachers Association
- Rolled them out in each building at a staff meeting
- 2 workshops per month per building
- Gave them as much PD as they wanted, when where and how they needed it.
- Had contests, competitions between grade levels/buildings (made it fun)



Our results

- EVERY teacher and administrator completed level 1.
- Based on survey results teachers felt supported, proud and ready to do more with technology in their instruction.
- Our work orders took a significant drop
 - We can do more integration, less support



What's next?

- Level 2 Proficiencies-specific to our corp, based on survey results from teachers
- Technology rich lessons MUST be included on curriculum maps.
- Some kind of assessment like Learning.com for 21st Century Skills for students.
- Level 3 will be a part of teacher evaluation

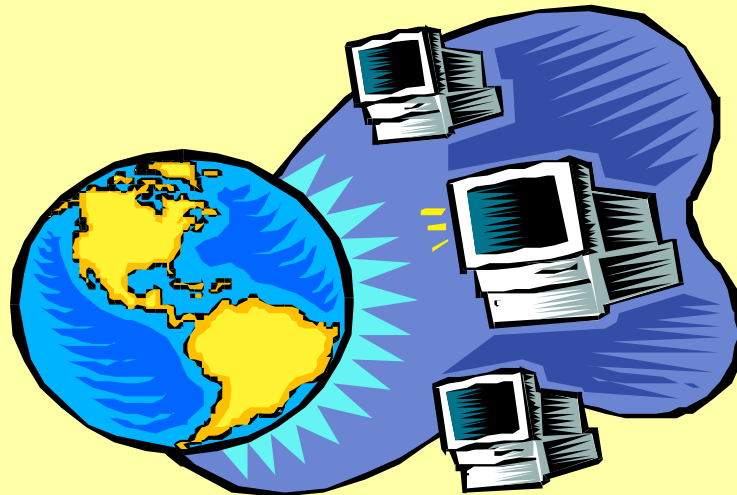




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Technology Standards for Teachers

Connecting Curriculum
and Technology



Changing Definitions

Teachers are told to:

- **1982** - Teach students to program in *Basic*

- **Rationale:** “It’s the language that comes with the computer.”

- **1984** - Teach students to program in *LOGO*

- **Rationale:** “Teach students to think, not just program.”

- **1986** - Teach with *integrated drill and practice* systems

- **Rationale:** “Individualize instruction and increase test scores.”

Source: H.J. Becker, “Analysis and Trends of School Use of New Information Technologies,” Office of Technology Assessment contractor report, March, 1994

Changing Directions

Teachers told to:

- **1988** - Teach *word processing*
 - Rationale: “Use computers as tools, like adults do.”
- **1990** - Teach with *curriculum-specific tools* (e.g., history databases, science simulators, data probes).
 - Rationale: “Integrating the computers with the existing curriculum.”

Source: H.J. Becker, “Analysis and Trends of School Use of New Information Technologies,” Office of Technology Assessment contractor report, March, 1994

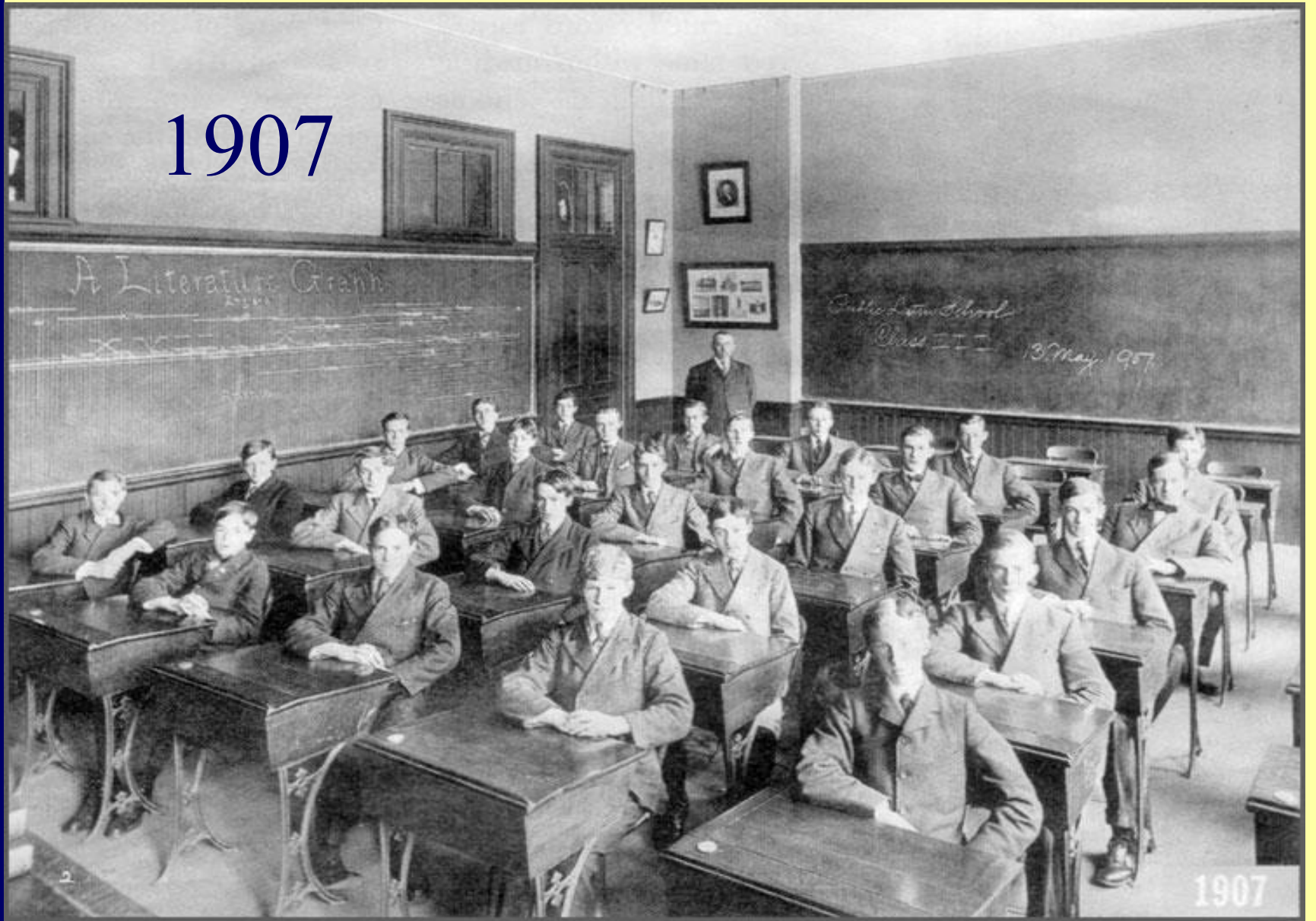
Changing Directions

Teachers were told to:

- **1992** - Teach *multimedia hypertext* programming
 - Rationale: “Change the curriculum, students learn the best by creating products for an audience.”
- **1994** - Teach with *Internet telecommunications*
 - Rationale: “Let students be part of the real world.”
- **2000** - **PDA**
- **2004** - **MP3/POD...** **2006** –**BLOG/WIKI**

Source: H.J. Becker, “Analysis and Trends of School Use of New Information Technologies,” Office of Technology Assessment contractor report, March, 1994

1907



1907

2002

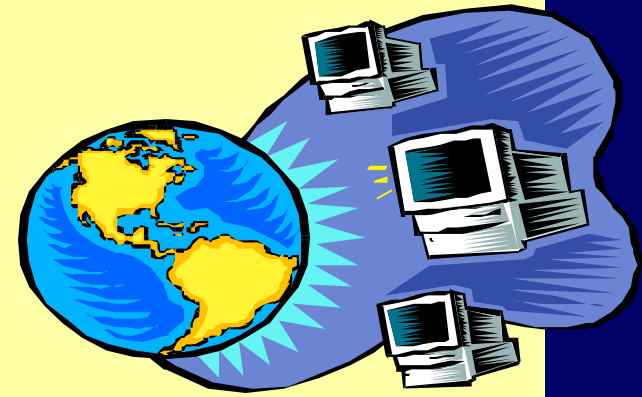


2002

Ready or Not . . .

The World is Different

- Work is different ...
- Tools are different ...
- Communication is different ...
- Information is different ...
- Kids' environment is different ...



And Learning Is Different!

Our Educational System Must Produce Technology-Capable Kids

Within a sound educational system students can become:

- **Capable information technology users**
- **Information seekers, analyzers, and evaluators**
- **Problem solvers and decision makers**
- **Creative and effective users of productivity tools**
- **Communicators, collaborators, publishers, and producers**
- **Informed, responsible, and contributing citizens**



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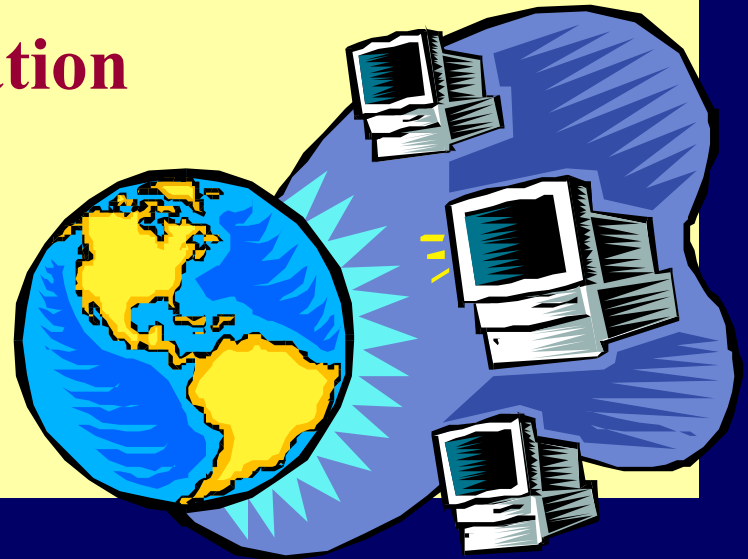
National Educational Technology Standards for Teachers

National **E**ducational **T**echnology **S**tandards **P**roject



Co-Sponsors

- U.S. Department of Education
- National Aeronautics and Space Administration
- Milken Exchange on Education Technology
- Apple Computer, Inc.





Use of NETS by State

National Educational Technology Standards (NETS) and the States

NETS for Students released in 1998, Revised **Fall 2007**

NETS for Teachers in 2000, **Revised 2008**

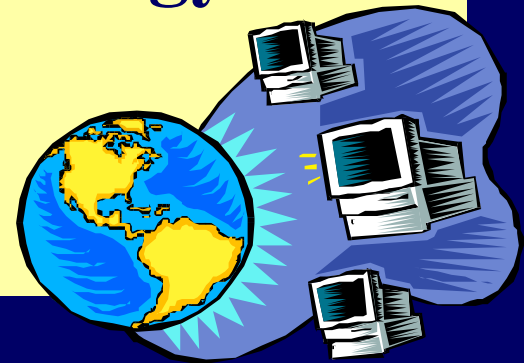
NETS for Administrators in 2001, **Revised 2009**

49 of the 51 (Puerto Rico) have adopted,
adapted, aligned with, or otherwise referenced
some of the standards in technology plans.



NETS-T STANDARDS CAN HELP EDUCATIONAL LEADERS WHY?

- ... these standards will
 - define the
 - fundamental concepts,
 - knowledge, skills, and
 - attitudes for applying technology
- ... in educational settings



Standards Categories

1. TECHNOLOGY OPERATIONS AND CONCEPTS.

Teachers demonstrate a sound understanding of technology operations and concepts.

2. PLANNING AND DESIGNING LEARNING ENVIRONMENTS AND EXPERIENCES.

Teachers plan and design effective learning environments and experiences supported by technology.

3. TEACHING, LEARNING, AND THE CURRICULUM

Teachers implement curriculum plans that include methods and strategies for applying technology to maximize student learning.

Standards Categories

4. ASSESSMENT AND EVALUATION

Teachers apply technology to facilitate a variety of effective assessment and evaluation strategies.

5. PRODUCTIVITY AND PROFESSIONAL PRACTICE

Teachers use technology to enhance their productivity and professional practice.

6. SOCIAL, ETHICAL, LEGAL, AND HUMAN ISSUES

Teachers understand the social, ethical, legal, and human issues surrounding the use of technology in PK-12 schools and apply those principles in practice.

Questions?



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